

Cleaning an Air Pistol

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The common misconception is that air pistol barrels don't require cleaning as there are no carbons or dirty residues from burning powder and primer. A few people will 'fire' a felt cleaning pellet through the barrel after a match or infrequently and that's about all that is done.

Air pistols fire by a gas propelling a soft lead pellet that is lubricated down a rifled barrel that may have a series of holes, ports, or a compensator fitted to reduce recoil. The propellant is now mostly compressed air, but there are still a few pistols using Carbon dioxide (CO²); and with both types there is the likelihood of very small quantities of water contaminating the propellant gases. The amount of water present is dependant on the quality of the filters used in compressing the gases. The pellet manufacturers use a lubricant to reduce lead fouling and it also prevents the pellets from oxidising (Peter Schmidt *Pers. comm.* 2017).

The soft lead pellet is driven down the rifled barrel at anywhere from 400-520fps and is deformed by contact with the lands of the rifling, therefore leaving behind some lubricant and lead in the barrel. The lead is deposited on the lands and in the corners of the rifling grooves, generally in uneven layers (Yur' Yev, 1973); and coach Allan Loszan reports that a W.A based athlete found in bench testing his air pistol before and after cleaning, the group size had nearly halved after cleaning.

After a number of shots we have a build-up of lead and lubricant with possibly some water particles mixed in. The impact

of these residues or fouling on our pistol is a measurable decrease in accuracy. Testing done in Germany revealed that on average a group using a machine rest was some 6-7mm in size when the pistol was clean. After firing several matches the group size increased to 10mm (Reinkemeier *et al*, 2013) as the barrel fouled.

Reading the manufacturers' manuals for a few models of Morini, Feinwerkbau, and Steyr air pistols, all indicated in the maintenance or cleaning section that the barrel should be cleaned by firing felt cleaning pellets through the barrel until the fired felt pellet was clean. There was no indication of how often, or after a nominated amount of shots fired, that this cleaning should be done. Reinkemeier *et al* (2013) recommend that 2-3 felt pellets are fired through the barrel for general cleaning; and that in badly soiled pistols, for a major cleaning; bore solvent be used with felt pellets mounted on either a cleaning rod or pull through. Noting that there must be several follow up clean felt pellets put through the barrel to ensure the bore is dry and no solvent remains.

Whilst the felt pellets fired through the barrel remove some of the fouling, it has been found that there is a significant difference between the amounts of fouling removed from the barrel when using the felt that is used with either the pull through or cleaning rod systems. This is because using the rod or pull through enables the user to change the outside diameter of the felt by screwing the felt deeper onto the threaded end; thereby increasing the amount of contact pressure with the inside diameter of the barrel, and removing more fouling.

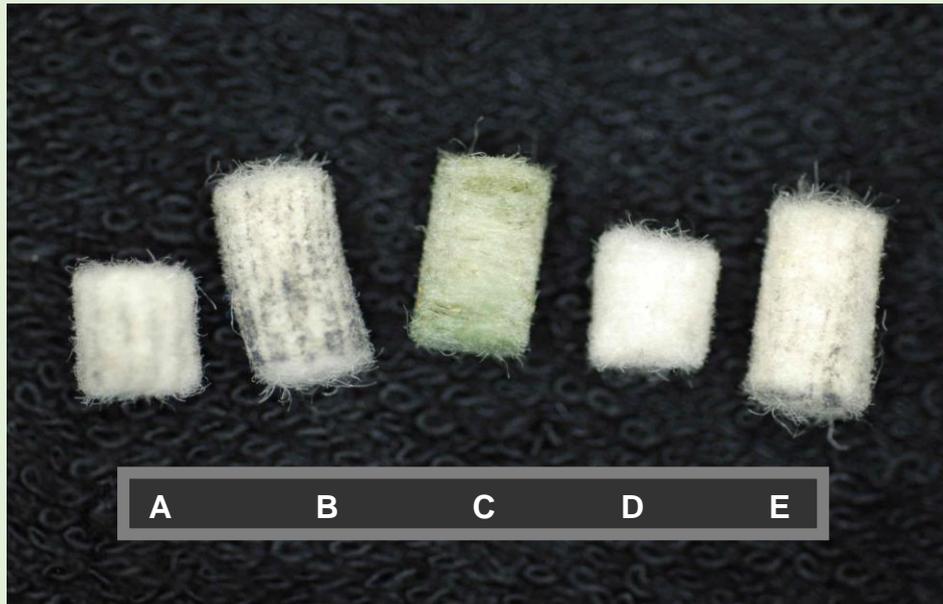


Photo 1. The small felt on the left (A) was fired through a pistol that had not been cleaned for a long period of time (some dirty marks are visible from the rifling imprint). Second from the left (B), this felt was put through the same pistol using a pull through after A had been fired through the barrel; clearly showing a more substantial amount of fouling removed. The middle felt (C) is slightly green in colour as it is impregnated with a cleaning compound and brass wire to assist in cleaning heavily fouled barrels. Fourth from the left (D) is a felt fired from a pistol that has one of these fired through the barrel at the end of each match or training session, and shows little if any evidence of fouling. On the far right this felt (E) was pulled through the barrel straight after D was fired through, and clearly shows some minor fouling.



Photo 2. VFG pull through kit (lid of tin, plastic coated pull-thru cable, normal felts and impregnated felts, and the disk on the right slips onto the cable to assist the pull).

After cleaning the barrel using a tighter fitting felt on a pull through or rod, the athlete should fire at least 10 shots after a general cleaning; or up to 40 shots after a major cleaning to

establish some level of fouling and associated accuracy; as it has been found that a well cleaned barrel does not group as well as one with some fouling (Reinkemeier *et al*, 2013).

Further in depth cleaning of barrel ports and compensators may be beyond the capability of the average shooter as the process may need the pistol to be taken apart. This level of cleaning may be done by the use of an ultrasonic cleaning system. It is recommended that this level of cleaning be done by a competent gunsmith or armourer.

It is recommended that the athlete fire 2-3 felt pellets through the barrel after each match or training session; and then after every two (2) tins of 500 pellets (1000 pellets) use a rod or pull through and run through two felts – the first to remove major fouling and the second to ensure the barrel is clean. Should the second felt still be dirty, it may be necessary to use an impregnated felt. A safe way to recover the felts for inspection is to fire them into an empty and dry plastic 500ml water bottle via placing the pistol muzzle in the open neck of the bottle.

We advise to read your pistol manufacturer's manual and to not do anything that is in conflict with it, as this may void your manufacturer's warranty.

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